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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,176	06/13/2001	David Chengson	0023-0009	3640

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EXAMINER	
HAN, CLEMENCE S	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/879,176	CHENGSON ET AL.	
	Examiner	Art Unit	
	Clemence Han	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-24,26-31,33 and 35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *8-21,30,31,33 and 35* is/are allowed.

6)☒ Claim(s) *1,2,5-7,22,23 and 26-29* is/are rejected.

7)☒ Claim(s) *3 and 24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 1, 2, 5-7, 22, 23 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lippett et. al. (US 6,667,993) in view of Mejia (US 6,680,970) and further in view of Leger (US 5,446,765).

Regarding claim 1, Lippett teaches a communication method comprising; receiving data from a first plurality of data lines 150, each data line providing data at a predetermined rate (Column 5 Line 55-57); serializing the received data (Column 5 Line 57-59, see 450 in Figure 4); providing the serialized data over a link (Column 5 Line 59-60); deserializing the serialized data to create deserialized data (Column 9 Line 29-30, see 706 in Figure 7); and providing the deserialized data to a second plurality of data lines 160 corresponding to the first plurality of data lines 150. Lippett, however, does not explicitly teach using a clock signal having a phase determined based on edges in the serialized data. Mejia teaches using a clock signal having a phase determined based on edges in the serialized

data (Column 5 Line 28-30, see Figure 1). It would have been obvious to one skilled in the art to modify Lippett to use a clock signal determined based on edges in the serialized data as taught by Mejia in order to avoid using extra line to carry the clock (Column 1 Line 53-54). Lippett in view of Mejia, however, does not teach the edges in the serialized data that occur at least once every other cycle of the clock signal. Leger teaches the edges in the serialized data that occur at least once every other cycle of the clock signal (Figure 7A). It would have been obvious to one skilled in the art to modify Lippett in view of Mejia to have the edges in the serialized data that occur at least once every other cycle of the clock signal as taught by Leger in order to recover the clock cycle from the data more easily (Column 2 Line 51-62).

Regarding claim 2, Lippett teaches the act of serializing including: multiplexing data from a first and a second of the first plurality of data lines onto a single data line clocked at a multiple of the predetermined rate (Column 5 Line 55-60).

Regarding claim 5, Lippett teaches the link including an optical fiber for carrying the serialized data (Column 22 Line 25-28).

Regarding claim 6, Lippett teaches detecting a predetermined pattern in the deserialized data (step 1604 in Column 20 Line 37-40); and aligning the

deserialized data with other data based on the detected pattern (step 1608 in Column 20 Line 41-42).

Regarding claim 7, Lippett teaches the act of providing serialized data including; transmitting the serialized data asynchronously through the link (Column 19 Line 17-20).

Regarding claim 22, Lippett teaches a communication system comprising; means 121 for receiving data from a first plurality of data lines 150, each data line providing data at a predetermined rate (Column 5 Line 55-57); means 450 for serializing the received data (Column 5 Line 57-59, Figure 4); a circuit for transmitting the serialized data 460, 115 (Column 5 Line 59-60); means 706 for deserializing the serialized data using a clock signal to create deserialized data (Column 9 Line 29-30, Figure 7); and means 132 for providing the deserialized data to a second plurality of data lines 160. Lippett, however, does not explicitly teach using a clock signal having a phase determined based on edges in the serialized data. Mejia teaches using a clock signal having a phase determined based on edges in the serialized data (Column 5 Line 28-30, see Figure 1). It would have been obvious to one skilled in the art to modify Lippett to use a clock signal determined based on edges in the serialized data as taught by Mejia in order to avoid using extra line to carry the clock (Column 1 Line 53-54). Lippett in view

of Mejia, however, does not teach the edges in the serialized data that occur at least once every other cycle of the clock signal. Leger teaches the edges in the serialized data that occur at least once every other cycle of the clock signal (Figure 7A). It would have been obvious to one skilled in the art to modify Lippett in view of Mejia to have the edges in the serialized data that occur at least once every other cycle of the clock signal as taught by Leger in order to recover the clock cycle from the data more easily (Column 2 Line 51-62).

Regarding claim 23, Lippett teaches the means for serializing further comprises; means for multiplexing data from a first and a second of the plurality of data lines onto a single data line at a rate different from the predetermined rate (Column 5 Line 55-60).

Regarding claim 26, Lippett teaches means 704 for aligning the phase of a clock signal based on the serialized data 904 (Column 11 Line 1-9).

Regarding claim 27, Lippett teaches an optical link for transmitting the serialized data (Column 22 Line 25-28).

Regarding claim 28, Lippett teaches means 710 for detecting a predetermined pattern in the deserialized data (step 1604 in Column 20 Line 37-40); and means 730 for aligning data from the data lines based on the detected pattern (step 1608 in Column 20 Line 41-42).

Regarding claim 29, Lippett teaches data on the first plurality of data lines is provided synchronously with a second clock signal (Column 20 Line 35-37) and wherein the serialized data is provided asynchronously (Column 19 Line 17-20).

Allowable Subject Matter

3. Claim 8-21, 30, 31, 33 and 35 are allowed.

4. The following is an examiner's statement of reasons for allowance: Independent claims 8, 13, 18, 30 and 33 recite multiplexing a data signal with the complement of the data signal.

5. Claim 3 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: claim 3 and 24 recite multiplexing a data signal with the complement of the data signal.

Response to Arguments

7. Applicant's arguments with respect to claim 1, 2, 5-7, 22, 23 and 26-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clemence Han whose telephone number is (571) 272-3158. The examiner can normally be reached on Monday-Thursday 7 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. H.

Clemence Han
Examiner
Art Unit 2665

STEVEN NGUYEN
PRIMARY EXAMINER